

OKAY TO SHIP
M/Lee 6/13/2017

U/R

Work Order ID 162405

162405

Page 1

Tuesday, June 06, 2017 4:57:32 PM

Item ID: D117-762-011 Accept *N900040100* Setup Start *NS1*
Revision ID: URF 17-547 Stop *NS2*
Item Name: Skidtube with Standard Wearplates Fits LH or RH
Start Date: 6/12/2017 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 6/23/2017 Req'd Qty: 1.00 *1* Customer:
Reference:

Approvals: Process Plan: _____ Date: JUN 12 2017 Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
DSI9771	A
IIN-D117-762	E

100 Document Control 0.00
100
DC Memo 1.50
Doc.Control -USB or Paperwork Photocopy bluefile & type labels per PPP D117-762-011 CHG004

110 Pick Kit 0.00
110
Packaging Memo 0.00
Packaging

B157977

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

Work Order ID 162405

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162405

Page 2

Item ID: D117-762-011 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 17-547 Stop ***NS2***
Item Name: Skidtube with Standard Wearplates Fits LH or RH
Start Date: 6/12/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/23/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.03							
Quality Control									
130	Packaging	0.00							
130									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D117-762-011 Location :FG081								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.10							
Quality Control									

DAS
27
9-89

JUN 14 2017

DAS
27
9-89

JUN 14 2017

DAS
21
9-89

JUN 14 2017



JUN 14 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Picklist Print

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Work Order ID: 162405

162405

Parent Item: D117-762-011

D117-762-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/12/2017

Required Date: 6/23/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A07.06.11New Issue EC
 IPP Rev:B 08-02-22 change to revA DD verified by:ec
 IPP Rev C 08.12.19 incorporated DSI9435 EC verified by:DD
 IPP REV:D 13.11.14 IIN REV.C DD VERF:JLM IPP
 REV:E 15.06.11 IIN REV.D DD VERF:JLM IPP REV:F
 17.01.17 PER CHG004 (dsi9771) DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN6C52A *AN6C52A* BOLT		Purchased	No			110	Each	27.0000	2	2		JUN 13 2017	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST333			27					
					m134535			3					
					m137490			24					
D5300-1 *D5300-1* GHL Bushing		Manufactured	No			110	Each	5.0000	2	2		JUN 13 2017	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST162			5					
					161352			5					
D5301-1 *D5301-1* GHL Plug		Manufactured	No			110	Each	2.0000	2	2		JUN 13 2017	
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST162			2					
					161353			2					
D117-762-041 *D117-762-041* Replacement Skidtube		Manufactured	No			110	Each	0.0000	1	1			

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Shop Packet Print

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Picklist Print

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Work Order ID: 162405

162405

Parent Item: D117-762-011

D117-762-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/12/2017

Required Date: 6/23/2017

Start Qty: 1.00

Required Qty: 1.00

D3512-041 Manufactured No

110 Each 12.0000 2 2

D3512-041

Wearplate

**

JUN 13 2017

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

ST610

12

155744

4

161911

8

2

MS21043-6 Purchased No

110 Each 100.0000 2 2

MS21043-6

NUT

**

JUN 13 2017

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

20

103693

20

FP001

36

m135470

2

m137361

34

ST302

44

m137479

44

2

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D117-762 REV. E AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-762 REV. 4

REF FAA STC: SR01853SE

REF: TC LETTER OF ACCEPTANCE RDIMS-4374899

REF EASA STC: EASA.10017063

1.0 PURPOSE

The purpose of this Dart Service Instruction (DSI) is to replace the ground handling lugs (D3864-1 Bushings, AN6C51A Bolts and MS21043-6 Nuts) on the D117-762-XXX Skid tubes with a structurally superior lug design (D5300-1 Bushings, D5301-1 Plugs, AN6C52A Bolts, MS21043-6 Nuts) as shown in Figure 1. The new hardware will be included in D117-762-011 @ CHG 004 and subsequent.

2.0 INSTALLATION

For D117-762-011 @ CHG 004 and subsequent, the ground handling hardware should be installed as follows:

- 2.1 Loosely install (qty 2) D5300-1 GHL Bushing & (qty 2) D5301-1 GHL Plug wet with Proseal 890 or MIL-S-8802 Class B2 Sealant in location shown in Figure 1.
- 2.2 Install (qty 2) AN6C52A Bolts and (qty 2) MS21043-6 Nuts in accordance with Figure 1. Clean up squeezed out Proseal and apply fillet seal around D5300-1 & D5301-1.
- 2.3 Torque AN6C52A Bolts 160 - 190 in-lbs (18.1 - 21.5 N-m).

3.0 PARTS LIST

For D117-762-011 @ CHG 004 and subsequent, the Part List in IIN-D117-762 and ICA-D117-762 is modified as follows:

IS

ITEM	QTY -011	PART NUMBER	DESCRIPTION
	X	D117-762-011	SKIDTUBE INSTALLATION
50	2	AN6C52A	BOLT
51A	2	D5300-1	GHL BUSHING
51B	2	D5301-1	GHL PLUG
52	2	MS21043-6	NUT

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 162405 m.s
17-06-12

A	NEW ISSUE	RF	17.01.09
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE, LTD EUGENE, OR	
DRAWN	RF		
CHECKED	WK	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9771	SHEET 1 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.		GHL UPGRADE KIT	NTS
DATE	17.01.09	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE, LTD.	

WAS

ITEM	QTY -011	PART NUMBER	DESCRIPTION
	X	D117-762-011	SKIDTUBE INSTALLATION
50	2	AN6C51A	BOLT
51	4	D3864-1	BUSHING
52	2	MS21043-6	NUT

4.0 WEIGHT AND BALANCE

There is negligible weight and balance change associated with this modification.

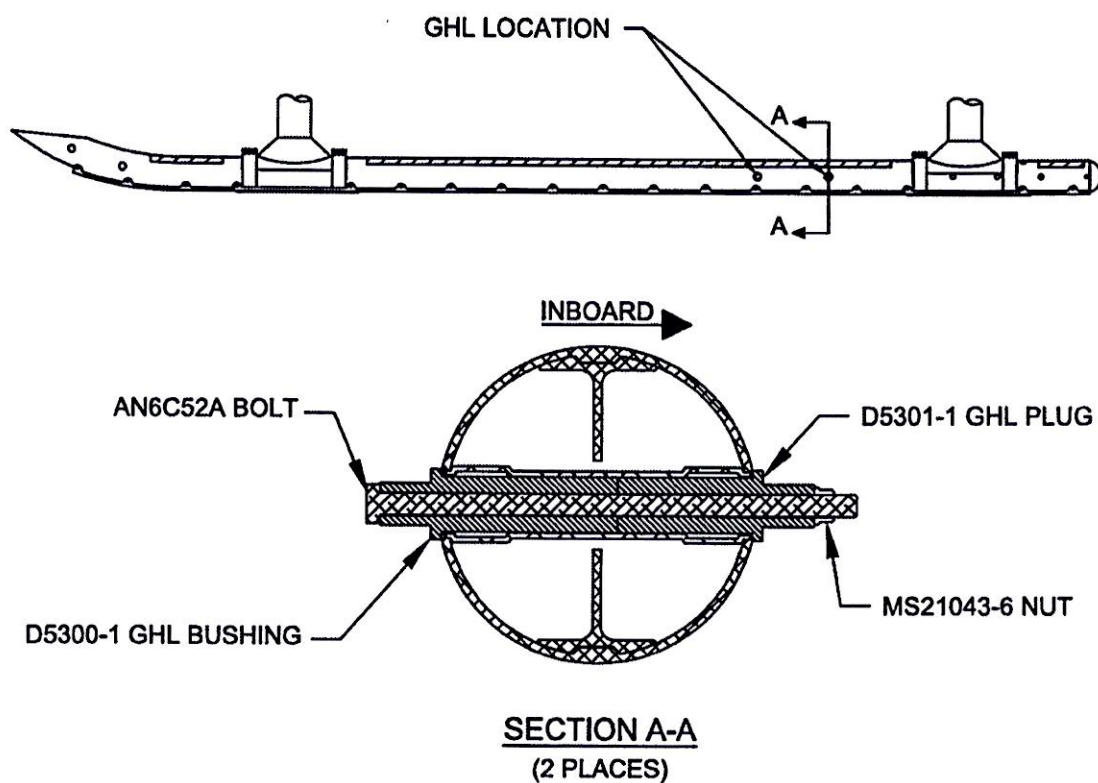


FIGURE 1 - GHU UPGRADE INSTALLATION

DESIGN	RF	DART AEROSPACE, LTD EUGENE, OR	
DRAWN	RF		
CHECKED	WK	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9771	SHEET 2 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.		GHL UPGRADE KIT	NTS
DATE	17.01.09	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC	
		THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE, LTD.	

DART SERVICE INSTRUCTION

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INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-762 REV. 4

REF FAA STC: SR01853SE

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51A	2	D5300-1	GHL BUSHING
51B	2	D5301-1	GHL PLUG
52	2	MS21043-6	NUT

A	NEW ISSUE	RF	17.01.09
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE, LTD EUGENE, OR	
DRAWN	RF		
CHECKED	WK	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9771	SHEET 1 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.		GHL UPGRADE KIT	NTS
DATE	17.01.09	COPYRIGHT ©2017 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE, LTD.	

5.0 PARTS LIST

5.1 D117-762-011 Skidtube Parts List

Item	Qty -011	Qty -041	Part Number	Description
	X		D117-762-011	SKIDTUBE INSTALLATION
	1	X	D117-762-041	REPLACEMENT SKIDTUBE
1		1	D3582-041	SKIDTUBE ASSEMBLY
2	2		**1121-51002	SKID SHOE
3	2		**1121-51102	CLAMPING RING
4	8		**LN9380M8X45	HEXAGON BOLT
5	8		**LN9023A8-1.4544.9	LOCKING WASHER
6	8		**LN9025-0815K	WASHER (OR LN9025-0815L)
10		1	*D2965	CAP
11		2	***AELS-1032-225	INSERT
12		2	*AN3C5A	BOLT
13		2	*NAS1149C0332R	WASHER (OR AN960C10L)
20A		1	*D3508-9	WEARPLATE
20B		1	*D3558-9	GASKET
21A		1	*D3508-3	WEARPLATE
21B		1	*D3558-3	GASKET
22A		1	*D3508-11	WEARPLATE
22B		1	*D3558-11	GASKET
23A		1	*D3508-13	WEARPLATE
23B		1	*D3558-13	GASKET
24		36	*AELS-1032-130	INSERT
25	8	28	*AN3C4A	BOLT
26	8	28	*NAS1149C0332R	WASHER (OR AN960C10L)
27	2		D3512-041	WEARPLATE
30		2	*AELS-1032-130	INSERT
31		2	*AN3C4A	BOLT
32		2	*NAS1149C0332R	WASHER (OR AN960C10L)
50	2		AN6C51A	BOLT
51	4		D3864-1	BUSHING
52	2		MS21043-6	NUT

* PART IS INCLUDED WITH D3582-041 SKIDTUBE ASSEMBLY

** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY

*** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

Work Order ID 162405***162405***

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Page 1

Item ID: D117-762-011

Accept

N900040100Setup Start ***NS1***

Revision ID: URF 17-547

Stop ***NS2***

Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 6/12/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 6/23/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: JUN 12 2017 Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
DSI9771	A
IIN-D117-762	E

JUN 13 2017

100 Document Control 0.00

100

DOCUMENT CONTROL

DC Memo 1.50

Doc. Control -USB or Paperwork Photocopy bluefile & type labels per PPP D117-762-011 CHG004

CB

JUN 13 2017

110 Pick Kit 0.00

110

Packaging Memo 0.00

Packaging

United States of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number SR01853SE

This certificate, issued to

Dart Aerospace USA, Inc.
190 S. Danebo Ave.
Eugene, OR 97402

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product—Type Certificate Number:

H13EU

Make:

Eurocopter Deutschland GMBH

Model:

MBB-BK 117 A-1; MBB-BK 117 A-3; MBB-BK 117 A-4;
MBB-BK 117 B-1; MBB-BK 117 B-2; MBB-BK 117 C-1;
MBB-BK 117 C-2

Description of the Type Design Change: Installation of skid tubes manufactured in accordance with Master Drawing List (MDL) MDL-D117-762, Revision D, dated July 2, 2013, or later Federal Aviation Administration (FAA) approved revision; installed in accordance with Installation Instructions IIN-D117-762, Revision B, dated January 24, 2013, or later FAA-approved revision; and maintained in accordance with Instructions for Continued Airworthiness (ICA) ICA-D117-762, Revision 1, dated February 13, 2013, or later FAA-accepted revision.

Limitations and Conditions: Approval of this change in type design applies only to the rotorcraft model listed above. This approval should not be extended to other rotorcraft of this model on which other previously approved modification are incorporated unless it is determined that the relationship between this change and any other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. A copy of this certificate, the MDL, installation instructions, and ICA must be maintained as part of the permanent record of the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: November 22, 2007

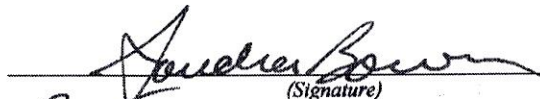
Date reissued: October 28, 2015

Date of issuance: June 26, 2008

Date amended: July 31, 2013



By direction of the Administrator


(Signature)

for Manager, Seattle Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.